
Directions: This exam contains 10 pages. There are three sections to complete. You must answer every question in the Multiple Choice section. For the Short Answer section, you must answer only TWO of the THREE questions, and in the Long Answer section, you must answer only ONE of the TWO questions. No extra credit will be granted for completing more than the required number of questions. The exam is out of 80 points. Good luck!

Multiple Choice (40 Points)

- (2 points) Suppose there is a tax imposed on the consumers of a particular good. Then, the burden of the tax will fall solely on the sellers if
 - Supply is elastic but not perfectly elastic
 - Demand is elastic but not perfectly elastic
 - Demand is perfectly inelastic
 - Supply is perfectly inelastic
- (2 points) Suppose that coffee and tea are substitutes. Suppose further that 15% of the coffee bean harvest is destroyed due to adverse weather. This would cause the equilibrium price of tea to _____, and the equilibrium quantity of tea to _____
 - decrease; decrease
 - decrease; increase
 - increase; increase
 - increase; decrease
- (2 points) If a worker loses her job in the automobile industry because there is a permanent decrease in the demand for cars produced in the U.S., this worker would be experiencing
 - Frictional unemployment
 - Structural unemployment
 - Cyclical unemployment
 - Natural unemployment

Table 1: Labor Market Data for an Imaginary Economy

Year	Working Age Population	Employed (in thousands)	Unemployed (in thousands)
2010	200,000	135,000	5,500
2013	240,000	140,000	14,000
2014	245,000	141,000	12,500

4. Based on the information provided in Table 1 above, the unemployment rate in 2013 was
 - A. 5.8%
 - B. 9.1%
 - C. 9.4%
 - D. 10.0%

5. Based on the information provided in Table 1 above, the labor force participation rate in 2014 was
 - A. 58.2%
 - B. 58.6%
 - C. 62.7%
 - D. 64.7%

6. (2 points) If the unemployment rate is 6%, that means that 6 percent of
 - A. the population is not working
 - B. the adult population is not working
 - C. potential workers do not have jobs
 - D. the labor force is not working at the time

7. (2 points) GDP is defined as
 - A. The market value of labor payments generated in the economy in a given time period.
 - B. The market value of all goods and services produced within a country in a given time period.
 - C. The market value of only goods produced within a country in a given time period.
 - D. The market value of all goods and services produced by a country's nationals in a given time period.

8. Suppose that between 2000 and 2013, CPI rose from 125 to 250. This implies that \$1 in 2000 buys as much as _____ in 2013
 - A. \$0.50
 - B. \$1.75
 - C. \$2.00
 - D. \$2.50

9. (2 points) Which of the following will generate a decrease in price and an increase in quantity?
 - A. Negative supply shock
 - B. Negative demand shock
 - C. Positive supply shock
 - D. Positive demand shock

10. (2 points) If a production possibility frontier (PPF) is a straight line, then
 - A. Producing on the frontier is not efficient
 - B. The amount of each good produced does not change along the frontier
 - C. The opportunity cost between the two goods produced is constant
 - D. All of the above

11. (2 points) The natural rate of unemployment can be defined as the unemployment rate that exists when the economy
 - A. has zero inflation
 - B. has only cyclical and structural unemployment
 - C. has no government deficit
 - D. has only frictional and structural unemployment

12. (2 points) Which of the following is NOT a normative statement
- Printing more money increases the inflation rate.
 - Printing more money is a good idea in a recession.
 - The government ought to print more money.
 - The president should not allow the government to print more money.
13. (2 points) If you got a loan at a 5% interest rate, and the inflation rate was 2% in that year, then what was the real interest rate on your loan?
- 2.5%
 - 3%
 - 7%
 - 5%
14. (2 points) A technological improvement is represented by
- A movement along the production possibilities frontier
 - A point outside the production possibilities frontier
 - A movement from a point inside the production possibilities frontier to a point on the production possibilities frontier
 - An outward shift of the production possibilities frontier
15. (2 points) A legally mandated minimum on the price at which a good may be sold is called a
- price floor
 - price ceiling
 - tax
 - quota
16. (2 points) A change in the price of a good leads to a _____, which leads to a _____
- change in its demand; movement along its demand curve
 - change in its quantity demanded; movement along its demand curve
 - change in its demand, shift in its demand curve
 - change in its quantity demanded; shift in its demand curve

Suppose an economy produces only apples and oranges as shown in the table below:

Table 2: Summary of Economic Activity (2014-2015)

Year	Price of Oranges	Quantity of Oranges	Price of Apples	Quantity of Apples
2014	\$2	400	\$2	800
2015	\$3	800	\$8	1200

17. (2 points) Assuming that 2014 is the base year, real GDP in 2015 was _____, and nominal GDP in 2015 was _____.
- \$2,400 and \$4,800
 - \$12,000 and \$4,000
 - \$2,400 and \$9,600
 - \$4,000 and \$12,000

18. (2 points) Given this, the GDP deflator in 2015 was
- A. 30
 - B. 100
 - C. 200
 - D. 300
19. (2 points) Which of the following is NOT a reason why the inflation rate computed using the CPI misstates the true change in prices faced by consumers?
- A. Substitution bias
 - B. Quality changes
 - C. Repricing bias
 - D. Introduction of new goods
20. (2 points) Suppose that the US is endowed with only labor. American workers produce only two goods: TV's and cameras. More specifically, the US can produce 5 million TV's in a year or 10 million cameras. Then, the opportunity cost of a camera is
- (a) two TV's
 - (b) the wages paid to workers
 - (c) one half of a TV
 - (d) three halves of a TV

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3. (10 points) Recent studies have uncovered the following empirical finding: modest minimum wage hikes do not have a big immediate negative impact on employment.
- (a) What type of price control is a minimum wage: price ceiling or price floor?
- (b) What does it mean for the minimum wage to be binding?
- (c) Suppose that the minimum wage binds. What must be true about the elasticity of supply and/or demand in the labor market in order for the empirical finding above to be consistent with our model of price controls? Explain.

Long Answer (20 Points)

1. (20 points) Assume 2014 is the base year for the calculations below. The table lists the prices and quantities of a fictitious economy.

Year	Good A		Good B		Good C	
	Quantity	Price	Quantity	Price	Quantity	Price
2014	30	5	18	2	20	1
2015	32	6	16	4	24	1
2016	33	7	14	8	25	2

- (a) Calculate nominal GDP in each of the three years in the table.
- (b) Calculate real GDP in each of the three years in the table. Is the economy growing? If so, explain how that can be true when the quantity of Good B is falling over time.

(c) Compute the GDP Deflator. What was the inflation rate in 2016 according to the GDP deflator?

(d) Recalculate nominal GDP in 2016 supposing that:

- (i) Good A is autos produced at home but exported to a foreign country
- (ii) Good B is haircuts
- (iii) Good C is tires that are all used in the production of autos (Good A)

2. (20 points) Consider the labor market data for the U.S. economy. All numbers are in millions of people.

Year	Population	Labor Force	Employed
2016	253	159	151
2017	255	160	153
2018	259	162	156

- (a) Calculate the labor force participation rate for each of the three years above. Provide a possible reason for the trend you observe in the labor force participation rate.
- (b) Calculate the unemployment rate for each of the three years above. Provide two critiques of the this measure of unemployment as a statistic that captures the health of the labor market.

- (c) Assume President Trump, in an effort to achieve 4% real GDP growth in 2019, gives a tax break to retirees if they “un-retire” and re-enter the labor force. As a result of the policy, assume 2 million retirees rejoin the labor force and immediately find a job. How will this new policy affect the labor force participation and unemployment rates? Defend your answer.
- (d) Suppose instead that only 1 million former retirees find jobs immediately while the other 1 million are actively seeking for employment. How does this outcome affect labor force participation and the unemployment rates? Explain.